

Managing Your Network Transformation with CMS 12.0

March 27, 2013

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Agenda

CMS 12.0 Value

Managing B6 Networks

CMS 12.0 Functionality Overview

- ▶ Managing New Features and ONTs
- ▶ C7 8.0MX

CMS Key to Unified Access

Summary

Manage Your Network Transformation

Software: CMS 12.0

Business Opportunity	Market Differentiator	Calix Building Blocks
Streamline service and network management • Consolidate element and service management under CMS for B6, C7 and E7 • Reduce training requirements	• Unified Access provides the optimal system for each strategic network location. One system manages service delivery from data center to the premise.	• CMS, OCM • Network – B6, C7, E7, E3 • Premise – 700s, 800s
Expand business service opportunity • Multi-pair DMT bonding service management • Enhanced OAM for SMB and MBH services	• Converged residential and business access • Symmetrical multi-megabit service over multi-pair DMT bonding	• CMS • Network – C7 • Premise – 740s
Expanded residential service opportunities • Enable WiFi residential service delivery	• 836 RSG latest addition to expansive fiber access ONT portfolio opens up new revenue opportunities for CSP	• CMS • Network – E7 and B6 • Premise – 836 RSG

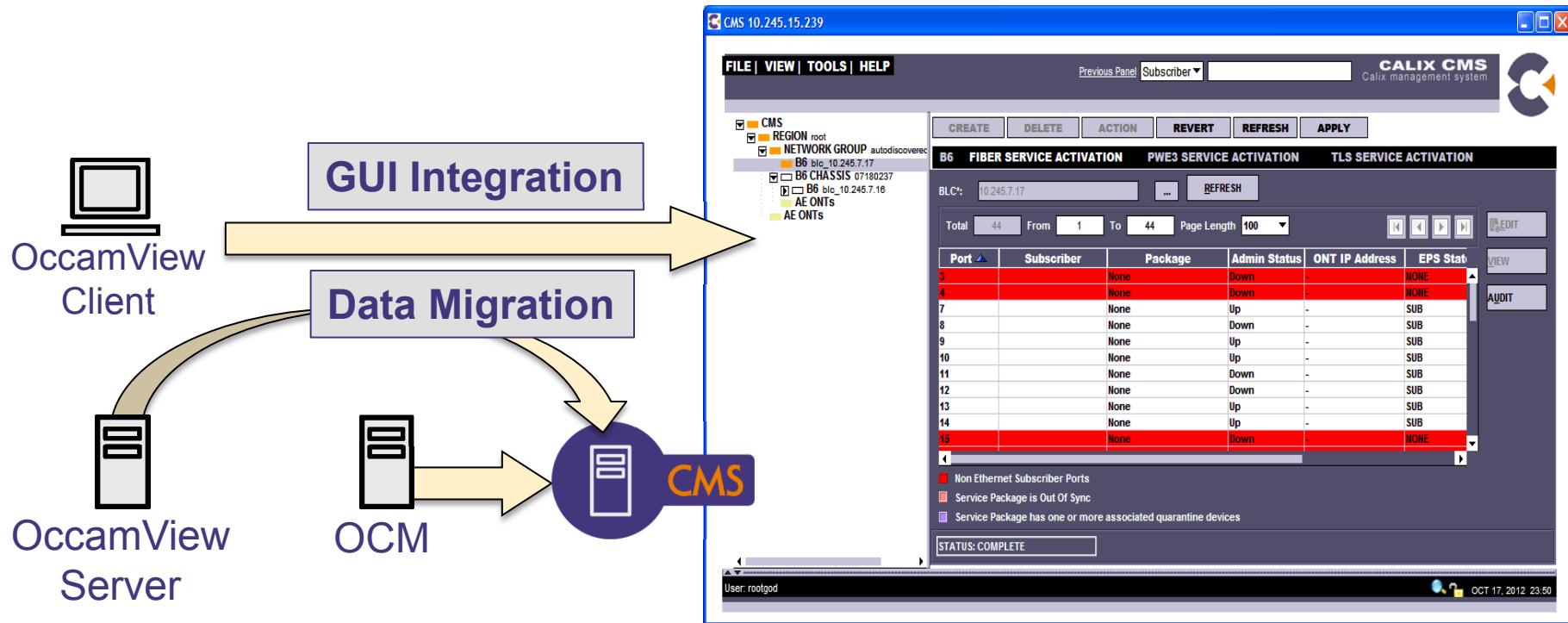
Simplifying the Transition to CMS

Helping B6 operators navigate the transition to CMS

- ▶ Upgrade from OV to CMS will be via the execution of a single script and associated MOPs (vs. an installer)
 - B6 system release 7.1 is last supported by OccamView
 - CMS console alarm shows migration success or failure
 - Log file captures script actions to simplify debugging in case of issues
- ▶ Script is a one-time procedure to be completed only when the CSP is ready to cut over to CMS
- ▶ OccamView users are asked to migrate to the latest OV version and then migrate to CMS
- ▶ OCM integrates into CMS to streamline the transition from 2000 to 700GE ONTs

Migration not required for customers already utilizing CMS unless moving subscriber and services data or OccamView user accounts to CMS.

B6 Management Integration



Transition B6 customers from legacy to CMS

- ▶ Migrate existing OccamView server database including subscriber and service records
- ▶ B6 elements now fully managed from CMS – alarms, service provisioning, DSL profiles, etc.
- ▶ OCM is now integrated into CMS

B6 Service Delivery

CMS 10.245.15.239

FILE | VIEW | TOOLS | HELP

Previous Panel: Subscriber

CALIX CMS
Calix management system

B6 FIBER SERVICE ACTIVATION | PWE3 SERVICE ACTIVATION | TLS SERVICE ACTIVATION

BLC: 10.245.7.17

REFRESH

Total: 44 | From: 1 | To: 44 | Page Length: 100

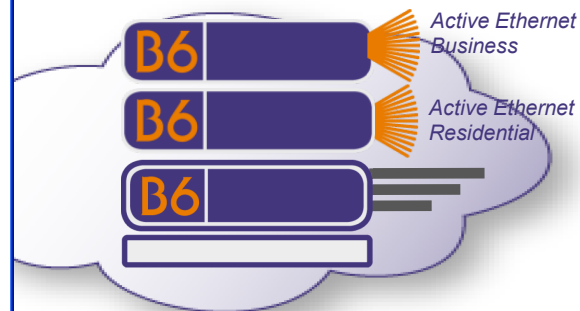
Port	Subscriber	Package	Admin Status	ONT IP Address	EPS Stat
3		None	Down	-	NONE
4		None	Down	-	NONE
7		None	Up	-	SUB
8		None	Down	-	SUB
9		None	Up	-	SUB
10		None	Up	-	SUB
11		None	Down	-	SUB
12		None	Down	-	SUB
13		None	Up	-	SUB
14		None	Up	-	SUB
15		None	Down	-	NONE

Legend:

- Non Ethernet Subscriber Ports
- Service Package is Out Of Sync
- Service Package has one or more associated quarantine devices

STATUS: COMPLETE

User: rootgod | OCT 17, 2012 23:50



AE and DSL Service Management

- Supports the new B6-452 line card
- Scheduled tasks
- Service package definition
- Inventory and topology management
- IP address management
- OS Management

OccamView / OCM to CMS

Other Considerations

Service management

- ▶ 836 RSG is not (in this release) managed via OCM, and thus not via the service interface being integrated from OccamView
- ▶ Full bridge mode supported in OCM, but not yet in the service interface being integrated from OccamView

Alarm / Topology management

- ▶ No support for generating alarm contact closures
- ▶ Threshold events are not supported
- ▶ Inter chassis links are not displayed on network group topology
- ▶ Chassis view is not available
- ▶ Valere alarm aggregation is now supported

CMS 12.0 Minimizes Work Flow Impact

B6 Active Ethernet Scenarios

Active Ethernet Service Provisioning				
ONT	CMS Workflow	OccamView Workflow	OCM	Notes
700GE	Half/Full Bridge	Half/Full Bridge	Half/Full Bridge	1,4,5
700GX	Half/Full Bridge	Half/Full Bridge	Half/Full Bridge	1,2,4,5
	Half/Full Bridge			
836RSG	Res Gateway	N/A	N/A	1,4,5
2300	N/A	Half/Full Bridge	Half/Full Bridge	3
Notes				
	1 Res Gateway in planning for CMS R12.1/OCM 2.5			
	2 Full Bridge not supported on MDU			
	3 CMS Workflow will not support 2300			
	4 Smart Activate support in OCM under consideration for R2.5			
	5 Circuit based provisioning in CMS under consideration for R12.1			

Migration Assistance

Calix recommends users upgrade to OccamView 5.3R5 prior to upgrading to CMS 12.0. The MOP for migration is available here:

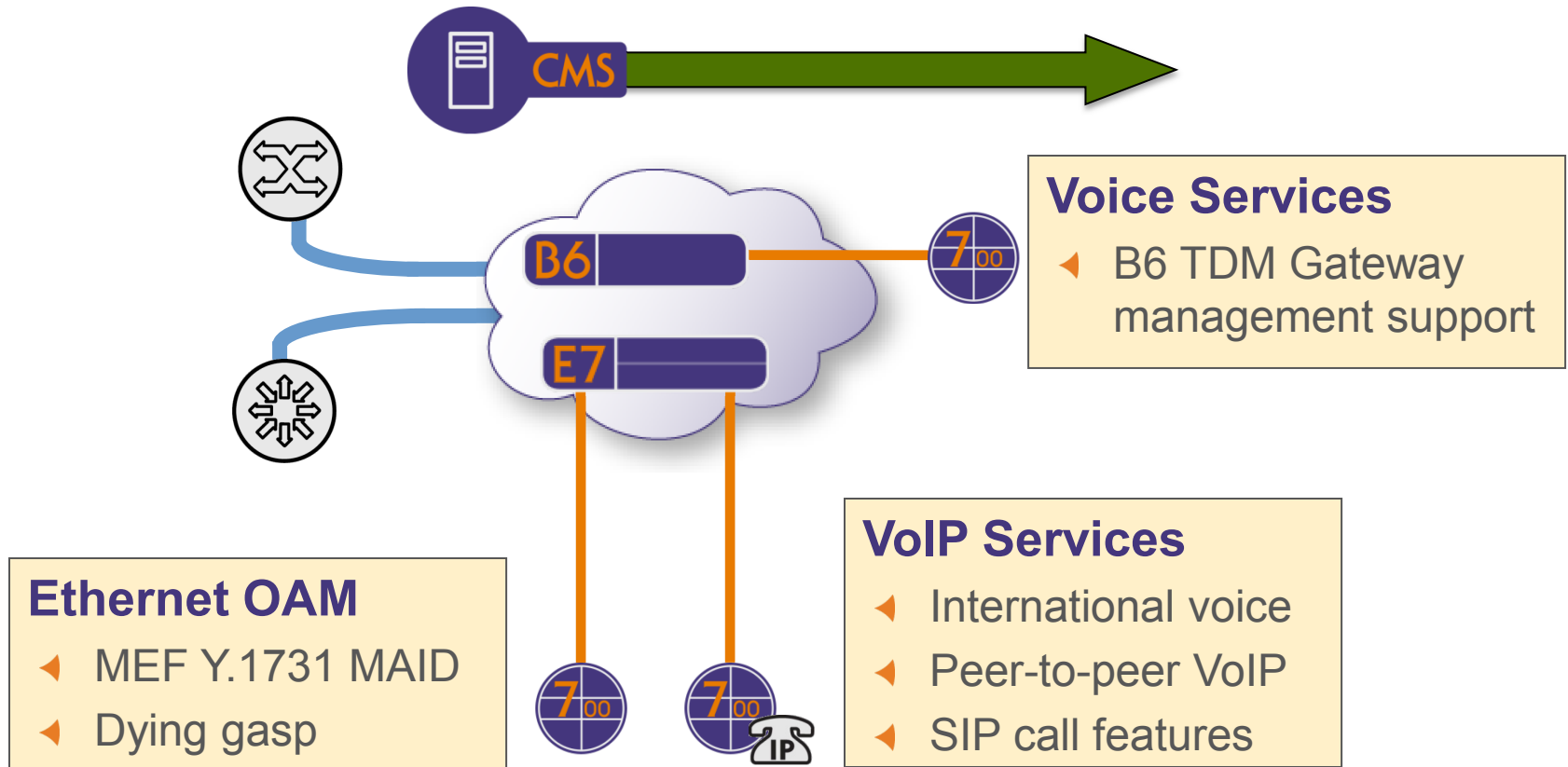
https://portal.calix.com/portal/calixdocs/b-series/sysop/cms/cms_12_0/index.htm?toc.htm?64833.htm

Contact Calix Professional Services for assistance

- ▶ OccamView to CMS database migration
- ▶ OCM to CMS work flow
- ▶ Network planning and SW upgrades

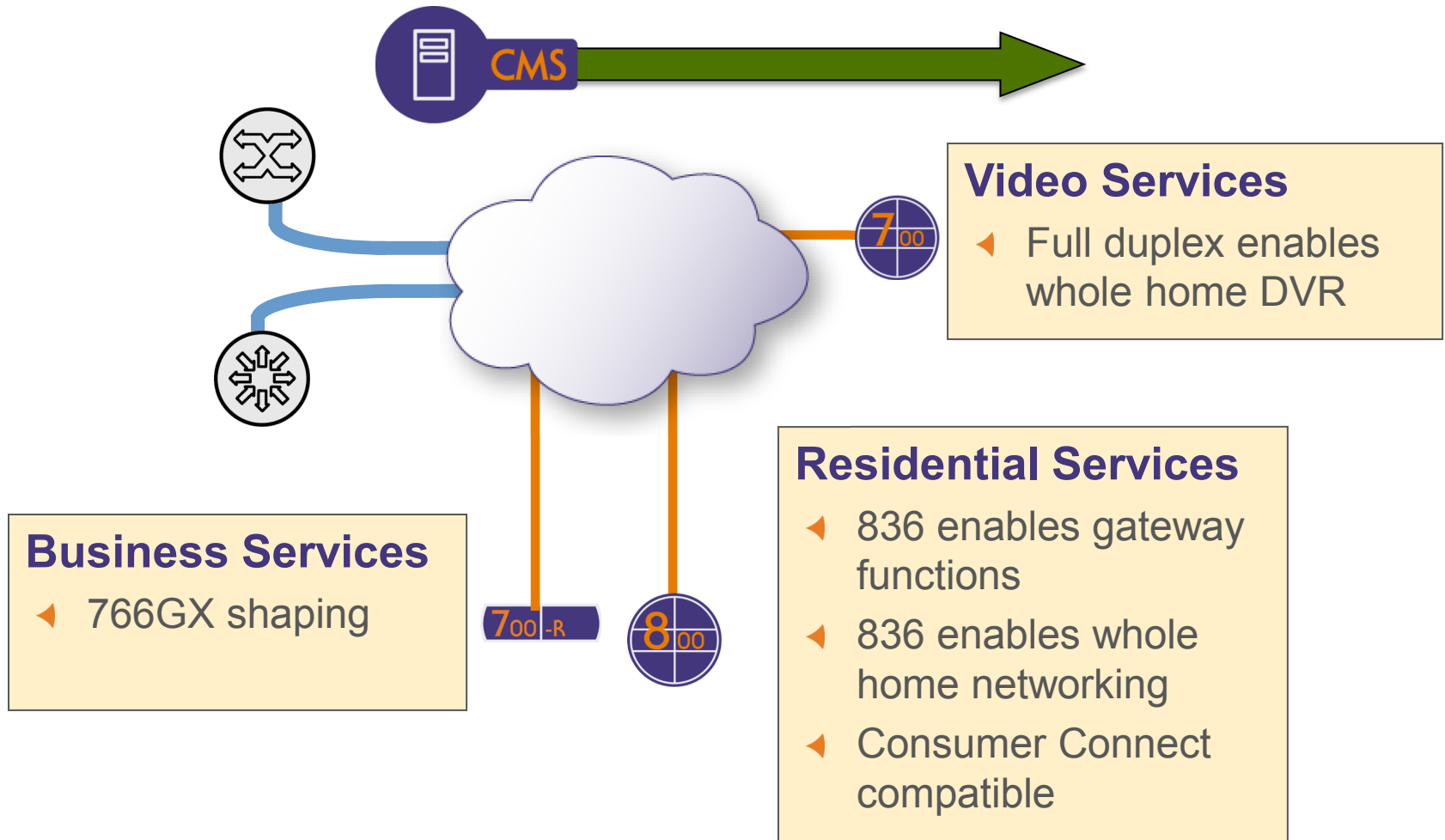
Functionality Overview

Support for ONT Active Ethernet R2.2



Functionality Overview

Active Ethernet R3.0



Functionality Overview

836 RSG Management

836 RSG

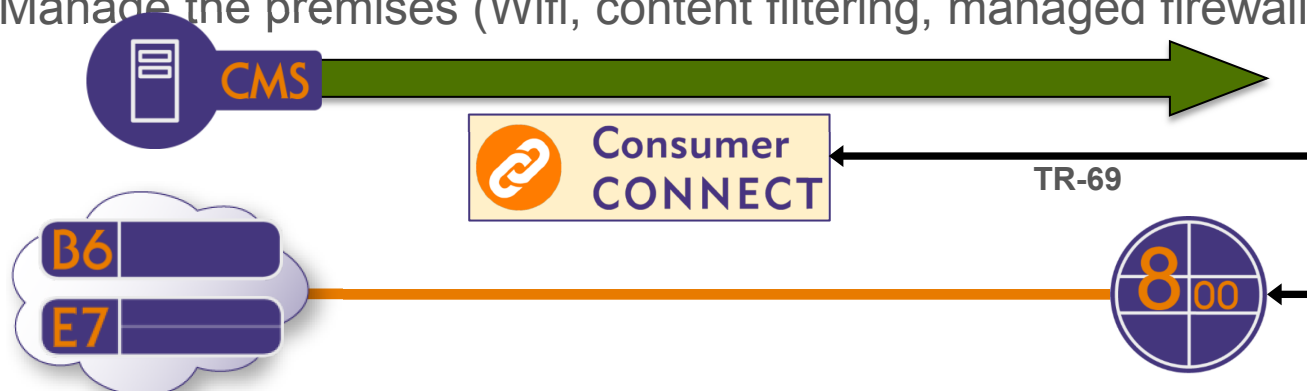
- ▶ Default VLAN with RG default on
- ▶ Default bandwidth profile at full line rate on RG virtual interface

CMS / Consumer Connect / local web UI

- ▶ Single service on RG including VLAN and BW provisioning
- ▶ Enable video over RG virtual interface

Consumer Connect and local web UI

- ▶ Support multiple services on RG virtual interface
- ▶ Support for Microsoft MediaRoom
- ▶ Manage the premises (Wifi, content filtering, managed firewall)



Easing the Migration to Full Bridge Mode

CMS introduces support for ONT Templates

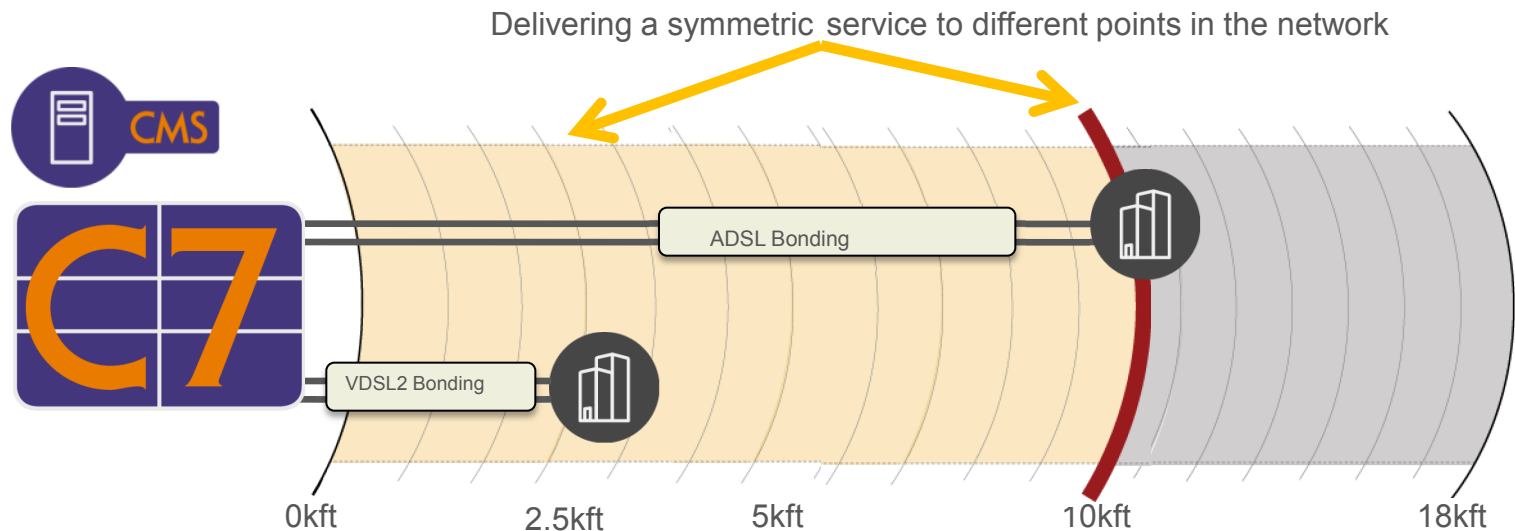
- ▶ Enables the CSP to define the LAN port mapping
- ▶ CMS is pre-configured with a single default template
- ▶ CSPs can create multiple templates
- ▶ CSP can now provision the video service against the Full Bridge interface (FB-1) rather than on each individual LAN port

SECURITY		SYSTEM		PROFILE		SUBSCRIBER TEMPLATES																																																																																									
C7	B6	E7/ONT	E5-400/E7	E3/E5-100	DEVICES																																																																																										
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DSL		ONT																																																																																													
▶ ONT TEMPLATE 1 ◀01 of 01▶ <table><tbody><tr><td>Name</td><td colspan="7">system-default</td></tr><tr><td>GE 1</td><td colspan="7">none ▼</td></tr><tr><td>GE 2</td><td colspan="7">FB 1 ▼</td></tr><tr><td>GE 3</td><td colspan="7">FB 1 ▼</td></tr><tr><td>GE 4</td><td colspan="7">FB 1 ▼</td></tr><tr><td>GE 5</td><td colspan="7">none ▼</td></tr><tr><td>GE 6</td><td colspan="7">none ▼</td></tr><tr><td>GE 7</td><td colspan="7">none ▼</td></tr><tr><td>GE 8</td><td colspan="7">none ▼</td></tr><tr><td>FE 1</td><td colspan="7">none ▼</td></tr><tr><td>FE 2</td><td colspan="7">none ▼</td></tr></tbody></table>								Name	system-default							GE 1	none ▼							GE 2	FB 1 ▼							GE 3	FB 1 ▼							GE 4	FB 1 ▼							GE 5	none ▼							GE 6	none ▼							GE 7	none ▼							GE 8	none ▼							FE 1	none ▼							FE 2	none ▼						
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Functionality Overview

Support for C7 8.0MX

- ▶ Multi-pair bonding VDSL2 for business access
- ▶ Enhance video with Multicast VLAN Registration and untagged video



CMS R12.0

Platform updates

B6 Phase 2 Integration	Continue delivery of B6 management integration
OS management	Automates firmware management and upgrades
R7.3 SW support	Enables deployments of B6-452
Service management	Allows CSPs that utilize OccamView for service management to migrate to CMS
Data migration	Moves service/subscriber data from OccamView to CMS
OCM integration	Supports service delivery over 700GE and 2000 ONTs including whole home DVR support on 700GE ONTs
DHCP profile management	Manages OCM IP pools for voice service and management
Inventory mgmt	Discovery and reporting of ports, facilities, profiles
Link topology management	Enables management of Layer 1 network topology
C7 R8.0	Expanded service capabilities
DMT Bonding	High speed copper service delivery
Hardware Support	725GE-I indoor ONT deployments

CMS R12.0

ONT updates

AE R2.2	Enhance business and VOIP service delivery
VOIP services	Peer-to-peer VOIP, SIP call feature support, B6 voice gateway interop
Business services	Support link OAM, Dying Gasp, MEF Y.1731 for business services

AE R3.0	RSG support for expanded premise networking
Hardware Support	Support for 836 RSG, enables 766 GX shaping
Service Support	
Residential GW	TR-069 agent enables management by Consumer Connect
Full Bridge Mode	Support of whole home DVR feature

Unified Access Support

Platform	Supported Releases
C7	R8.0, R7.2, R7.0
E7/E5-400	R2.1, R2.0, R1.2
E3-48	R1.0
E5-12x/E3-12C	R4.1, R3.1, R2.1
E5-11x	R4.0, R3.0, R2.0
AE ONT	R3.0, R2.2, R2.1
B6	R7.3, R7.2, R7.1, R6.2R4, R5.5, R5.2R2* Phases 1 and 2 Content Only
F5	R4.0, R3.1
FD	R9.0, R8.0

Notes

- ▶ Calix supports current platform releases plus two major previous releases
- ▶ All B6 cards must be running the latest supported software version they are capable of hosting.
- ▶ B6 cards supporting release B6 R6.2R4 and earlier will require manual trap registration. CMS will provide alarm aggregation & topology management only for blades running B6 R5.5 & B6 R5.2

For More Details

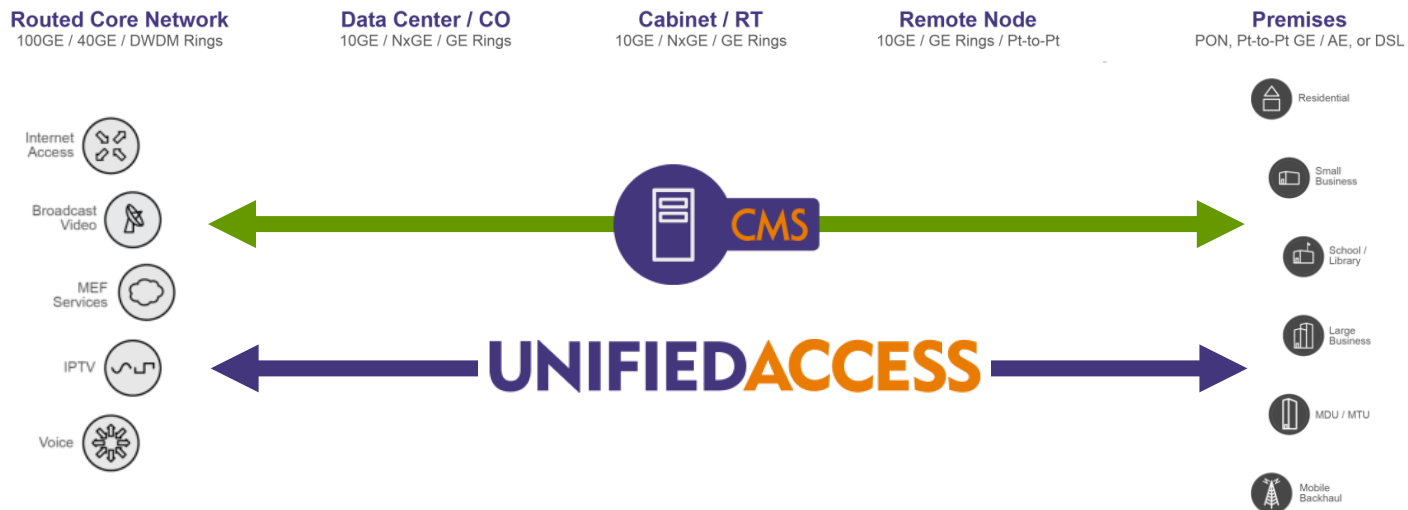
Download and read the extensive CMS 12.0 CAB from the Calix customer portal

https://portal.calix.com/portal/calixdocs/cms/b/ppg/CAB-13-016_CMS_R12-0_PPG.pdf

Summary

Simplifying network transformation

- ▶ CMS integrates OccamView service management and OCM functionality streamlining shifts in network designs
- ▶ Continued service expansion through increased functionality (i.e., 836 RSG, whole home DVR, B6 R7.3...)
- ▶ Operational efficiencies from a single element management system for all Calix products – B6, C7, E7, 700 ONTs, 800 RSGs





Calix

ACCESS INNOVATION